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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,862	12/26/2001	Hong-Man Moon	8733.567.00	7627
30827	7590	02/20/2004	EXAMINER	
MCKENNA LONG & ALDRIDGE LLP			LANDAU, MATTHEW C	
1900 K STREET, NW			ART UNIT	
WASHINGTON, DC 20006			PAPER NUMBER	

2815

DATE MAILED: 02/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/025,862

Applicant(s)

MOON ET AL.

Examiner

Matthew Landau

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AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1, as amended, recites the limitation “each connecting line connecting each pixel to *at least one* of the electrostatic discharge devices” (emphasis added). The limitation “at least one” encompasses more than one. The application as filed does not support this limitation. Neither the specification nor the drawings disclose a connecting line connecting a pixel to more than one electrostatic discharge device. It is suggested the limitation be rewritten as “each connecting line connecting a [each] pixel to [at least] one of the electrostatic discharge devices.”

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kusanagi (US Pat. 6,108,057) in view of the admitted prior art.

In regards to claim 1, Figures 4 and 5 of Kusanagi disclose a substrate 14 having a display region and a non-display region; a plurality of pixels in the display region; a plurality of first and second electrodes (36 and 26) on the substrate; a plurality of electrostatic discharge devices 64a/64b (only those horizontally arranged above electrode 60) in the non-display region, wherein each electrostatic discharge device is at a distance of more than one pixel pitch from the pixels; and a plurality of first connecting lines 40 in the non-display region, each connecting line connecting each pixel to at least one of the electrostatic discharge devices. The difference between Kusanagi and the claimed invention is an electric field formed between the first and second electrodes substantially parallel to the substrate when a voltage is applied to the first and second electrodes. Figure 4 of the instant application discloses an in-plane switching device wherein a plurality of first and second electrodes (34 and 36) such that an electric field formed between the first and second electrodes substantially parallel to the substrate when a voltage is applied to the first and second electrodes. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Kusanagi by using the in-plane switching device of the admitted prior art for the purpose of increasing the viewing angle of the device (page 4, lines 20-24 of the instant application).

Claims 1-10, 12, 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraki et al. (US Pat. 5,926,234, hereinafter Shiraki) in view of the admitted prior art.

In regards to claim 1, Figures 1-4 of Shiraki disclose a substrate 1 having a display region and a non-display region; a plurality of pixels 7 in the display region; a plurality of first and second electrodes (7a and 24) on the substrate; a plurality of electrostatic discharge devices 10 in the non-display region, wherein each electrostatic discharge device is at a distance of more than one pixel pitch from the pixels; and a plurality of first connecting lines 11 in the non-display region, each connecting line connecting each pixel to at least one of the electrostatic discharge devices. The difference between Shiraki and the claimed invention is an electric field formed between the first and second electrodes substantially parallel to the substrate when a voltage is applied to the first and second electrodes. Figure 4 of the instant application discloses an in-plane switching device wherein a plurality of first and second electrodes (34 and 36) such that an electric field formed between the first and second electrodes substantially parallel to the substrate when a voltage is applied to the first and second electrodes. In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Shiraki by using the in-plane switching device of the admitted prior art for the purpose of increasing the viewing angle of the device (page 4, lines 20-24 of the instant application).

In regards to claim 2, Figures 1-4 of Shiraki disclose a plurality of switching devices 8 on the substrate.

In regards to claim 3, Figures 1-4 of Shiraki disclose each switching device 8 is disposed in each pixel.

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In regards to claim 4, Figures 1-4 of Shiraki disclose the switching device 8 includes a thin-film transistor.

In regards to claim 5, Figures 1-4 of Shiraki disclose first and second lines (3 and 2) on the substrate 1.

In regards to claim 6, Figures 1-4 of Shiraki disclose the first and second signal lines (3 and 2) apply signals to each switching device 8.

In regards to claim 7, Figures 1-4 of Shiraki disclose the first line 3 includes a gate line.

In regards to claim 8, Figures 1-4 of Shiraki disclose the second line 2 includes a data line.

In regards to claim 9, Figures 1-4 of Shiraki disclose the first electrodes 7a include a pixel electrode.

In regards to claim 10, Figures 1-4 of Shiraki disclose the second electrodes 24 include a common electrode.

In regards to claim 12, Figures 1-4 of Shiraki disclose a plurality of pads 6 in the non-display region.

In regards to claim 14, Figures 1-4 of Shiraki disclose a plurality of second connecting lines 11 in the non-display region.

In regards to claim 15, Figures 1-4 of Shiraki disclose each second connecting line 11 connects each electrostatic discharge device 10 to each pad 6.

In regards to claim 16, the intended use limitation “wherein a voltage of the first connecting lines is different from a voltage of the electrostatic discharge devices” does not structurally distinguish the claimed invention over Shiraki.

In regards to claim 17, the intended use limitation “wherein each first connecting line receives signal voltage of inverted phase” does not structurally distinguish the claimed invention over Shiraki.

In regards to claim 18, Figures 1-4 of Shiraki disclose an auxiliary line 11 in the non-display region.

In regards to claim 19, Figures 1-4 of Shiraki disclose the auxiliary line 11 connects each of the electrostatic discharge devices 10.

In regards to claim 20, it is further obvious in the invention of Shiraki and the admitted prior to have the auxiliary line receive a signal applied to the second electrode to contain the flow of ions.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraki in view of the admitted prior art as applied to claim 1 above, and in further view of Seraphim et al. (US Pat. 5,889,568, hereinafter Seraphim).

A further difference between Shiraki and the claimed invention is one pixel pitch is between about 1mm and about 1.5. Seraphim discloses an LCD device wherein the pixel pitch is one millimeter (column 15, lines 45-50). In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to further modify the invention of Shiraki by having a 1 mm pixel pitch for the purpose of simplifying the fabrication process.

***Allowable Subject Matter***

Claim 13 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

Applicant's arguments filed October 14, 2003 have been fully considered but they are not persuasive.

In response to Applicant's arguments regarding that "the Examiner incorrectly equates the plurality of discharge devices of the present application to element 10, a protective circuit, of Shiraki", Shiraki discloses the protective circuit protects against static electricity in the manufacturing process and the input surge during normal operation (see abstract). Therefore, it is clear that the ordinary artisan would consider the protective circuits 10 to be electrostatic discharge (ESD) devices. It is unclear why Applicant takes this position since no explanation was provided as to why the protective circuits 10 cannot be considered ESD devices.

Furthermore, Figure 1 of Shiraki clearly shows the ESD devices 10 are considerably more than one pixel pitch from the pixels.

In response to Applicant's arguments that "there is no teaching in Seraphim that would motivate one of ordinary skill in the art to provide a range for a pixel pitch "between 1 mm to about 1.5 mm", it is noted that the claim states "between about 1mm and 1.5mm". Therefore, Seraphim's teaching of 1 mm pitch reads on the claim. Furthermore, the motivation provided in the above rejection comes from the teachings of Seraphim. In lines 45-47, Seraphim teaches that



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a 1 mm pixel pitch could be manufactured with current techniques. The ability to use current techniques simplifies the production process since no new methods must be designed.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Landau whose telephone number is (571) 272-1731.

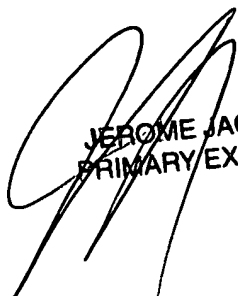
The examiner can normally be reached from 8:30 AM - 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Matthew C. Landau

Examiner

February 17, 2004

  
JEROME JACKSON  
PRIMARY EXAMINER